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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary

Application No.

10/776,004

Applicant(s)

YACH ET AL.

Examiner

ROBERT TIMBLIN

Art Unit

2167

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 January 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 2, 4-15, and 18-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4-15 and 18-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/06)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

This Office Action corresponds to application 10/776,004 filed 2/10/2004.

Response to Amendment

Claims 1, 2, 4, 5, 7, 8-15 have been amended. No claims have been added or cancelled. Accordingly, claims 1-2, 4-15, and 18-20 are pending prosecution.

Claim Objections

The previous claim objections have been withdrawn in light of the responsive amendments. Examiner thanks Applicant for the correcting amendments.

35 USC § 101

The previous claim rejections under section 101 are withdrawn due to the amendments. As best interpreted, processing circuitry as found in claim 1 and its dependents necessitates a hardware element to define a statutory machine.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 4-13, 15, and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Livschitz (U.S. Patent 6,470,329).

With respect to claim 1, Livschitz teaches A mobile node part (col. 9 line 49; PDA device) of a radio communication system (fig. 9 and col. 9 line 49-50) having a network part (col. 9 line 50; PDA server) and a mobile node part (col. 9 line 49; PDA device), the network part (col. 9 line 49; PDA device) having a network-copy of a database (Figs 1-9; e.g. M2) containing data (e.g. Fig 1, data set B) and the mobile node (col. 9 line 49; PDA device) having a mobile-copy of the database (fig. 2, M1) containing data (Fig. 1, data set A), the data of the network-copy (Fig. 1, data set B) and the mobile-copy (Fig. 1, data set A) of the first database, respectively, correspond to each other when the network-copy (Figs 1-9; e.g. M2) and the mobile-copy (fig. 2, M1) of the first database are in match with one another (col. 2 lines 38-40; e.g. when the databases are in synchronization, they are in match with one another), said mobile node comprising:

processing circuitry (fig. 9) coupled to said mobile-copy database, said circuitry configured to:

i) generate first (fig. 1) and second hashes (fig. 2,3; e.g. the databases are recursively hashed in a sequence of steps to teach at least a first and second hash), which are computed using first (fig. 1 and col. 5 line 49-50; e.g. a large data set is hashed) and second (fig. 2 wherein the large set is divided and then hashed) different types of hash techniques respectively (figs. 1-3; e.g. a hash of the large set or divided set is a first technique and a hash of the divided set over a reduced portion is a second technique. See also fig. 7 and col. 8 lines 11-16 wherein hash

technique H and different technique G is used), the first hash being formed over at least a first part (fig. 1,2; e.g. large set A) of the mobile-copy database (fig. 1, M1) using the first technique (fig. 1; e.g. hashing one data set) to determine (col. 6 line 29-30; e.g. a determination if the data sets are identical) whether the first part (fig. 1,2; e.g. large set A) of the mobile-copy database is out of match with a corresponding first part of the network-copy database (fig. 1,2; e.g. large set B), the second hash (the hashes computed in figs. 2-3) being formed by the circuitry (col. 2 line 43; e.g. hash function) over a sub-part (fig. 3; e.g. a hash is formed over the (top) part of data set A) of the first part (fig. 1,2; e.g. large set A) of the mobile copy database using the second technique (figs. 2-3; e.g. a hash performed on a reduced data set) upon a determination that the first part of the mobile-copy database and the first part of the network-copy database are out of match (col. 6 line 32-58; e.g. the process is continued while the portions are not identical); and

ii) retrieve data (fig. 4; e.g. retrieve a copy) from the mobile-copy of the database (fig. 4 M1) upon determination that the sub part (fig. 3; e.g. a hash is formed over the (top) part of data set A) of the at least a first part (fig. 1,2; e.g. large set A) of the network-copy (fig. 1, M2) and the mobile-copy (fig. 1, M1) are out of match (col. 6 line 32-58; e.g. the portions are not identical), the data retrieved by said circuitry from the mobile-copy database (fig. 8; e.g. reference 94) being communicated (fig. 4) to the network part (fig. 4; M2 wherein the copy is received), to match the network-copy and the mobile-copy to each other (col. 2 lines 38-39; e.g. to synchronize the data sets);

wherein the radio communication system provides bi-directional (col. 9 lines 49-60 wherein the PDA device is synchronized to the server; therein data synchronized between the

PDA server and PDA device describes bi-directional data communications) data communications services to said mobile node part (fig. 9, reference 84), and

wherein data is communicated from the mobile node part to the network part by an up-link (col. 9 lines 60-61; e.g. the PDA device uses a wireless connectivity to upload the schedule; therein, uploading is interpreted as using an up-link) and, data is communicated from the network part to the mobile node part by a down-link (col. 1 lines 34-35; e.g. data is transferred between an original data set and remote copy and col. 10 lines 15-18; e.g. the PDA server returns a 365-bit mask to the PDA device).

With respect to claim 2, Livschitz teaches the apparatus of claim 1 wherein said circuitry generates the first hash to an external triggering event, occurrence of which is detectable at the mobile node part (col. 9 line 50-56).

With respect to claim 4, Livschitz teaches the apparatus of claim 2 wherein said circuitry generates first-type hashes using said first technique upon detection of an external triggering event, occurrence of which is detectable at the mobile node part and wherein said circuitry generates second-type hashes using said second technique responsive to determination of mismatch of the first-type hashes, generated by said circuitry (col. 6 line 41-45).

With respect to claim 5, Livschitz teaches the apparatus of claim 4 wherein the data maintained at the network-copy and the mobile-copy of the at least the first database is comprised of data records (col. 2 line 44-45, col. 9 line 54-55), each data record formed of fields

including at least a first key field and at least a first record field (col. 5 line 24-25 wherein a database with an index is described to teach a key field and record field), and wherein the second-type hashes generated by said circuitry are formed of values of the at least the first key field (col. 2 lines 38-50 wherein the data is hashed to form signatures).

With respect to claim 6, Livschitz teaches the apparatus of claim 5 wherein the determination that the network-copy and the mobile-copy are out of match is made responsive to values of the second-type hashes formed of the values of the at least the key field (col. 6 line 59-56).

With respect to claim 7, Livschitz teaches the apparatus of claim 5 wherein the data retrieved by said circuitry comprises both the at least the first key field and the at least the first record field (fig. 6; e.g. the record is copied to the second data set).

With respect to claim 8, Livschitz teaches the apparatus of claim 1 wherein the circuitry is additionally configured to:

- iii) receive values of hashes (signatures $h(A)$ and $h(B)$) generated by a network part circuitry, said determiner for determining whether the values of hashes formed at the network part, correspond with locally-generated values; and

- iv) receive indications of database mismatches, said circuitry thereafter requesting additional information associated with the mobile-copy of the at least the first database (col. 6 line 67; e.g. the recursive process requests additional information until complete).

With respect to claim 9, Livschitz teaches the apparatus of claim 8 wherein hashes generated by said network part circuitry (14, 16) include said first hash-type and said second hash-type (fig 1 and 3, respectively).

With respect to claim 10, Livschitz teaches the apparatus of claim 8 wherein the additional information requested by said circuitry comprises a request for the mobile node to deliver hash information (col. 6 line 5 and figure 2 wherein the signatures are transmitted) of the second hash-type to the comparator (38, 40).

With respect to claim 11, Livschitz teaches the apparatus of claim 8 wherein the data maintained at the network-copy and the mobile-copy of the at least the first database is comprised of data records (col. 5 line 27) and wherein the additional information requested by said circuitry comprises a request for the mobile node to deliver values of at least portions of the data records (fig. 4 and col. 7 line 10-14).

With respect to claim 12, Livschitz teaches the apparatus of claim 11 further comprising circuitry (38, 40) adapted to receive the values of the at least the portions of the data records (fig. 2) responsive a comparison of the values with corresponding values of the network-copy of the at least the first database (fig. 3).

With respect to claim 13, Livschitz teaches the apparatus of claim 12 further comprising a database value updater circuitry (col. 10, line 20) configured to alter at least one data record of a selected one of the mobile-copy and the network-copy of the at least the first database (col. 10, line 20; e.g. updating is seen as altering).

With respect to claim 15, Livschitz teaches A method of communicating in a radio communication system (fig. 9 and col. 9 line 49-50) having a network part (col. 9 line 50; PDA server) that maintains at least a network-copy of a database (Figs 1-9; e.g. M2) containing data and a mobile node (col. 9 line 49; PDA device) that maintains a mobile-copy of the database (Figs 1-9; e.g. M1) containing data (e.g. Fig 1, data set A), the data of the network-copy (Figs 1-9; e.g. M2) and the mobile-copy (Figs 1-9; e.g. M1) of the first database, respectively, correspond when the network-copy and the mobile-copy of the first database are in match with one another, said method for altering (col. 10, line 20; e.g. updating is seen as altering) the data of at least one of the network-copy and the mobile-copy of the at least the database to place the network-copy and the mobile-copy in match with each other (col. 2 line 51; e.g. to place the computing systems in synchronization), said method comprising:

generating a first hash value (fig. 1) in the mobile node (col. 9 line 49; PDA device) from the mobile-copy of the database (Figs 1-9; e.g. M1) when the network-copy and the mobile copy are suspected of being out of synchronization with each other (col. 6 line 41-49 col. 9 line 52-56), said first hash value being formed using a first hash technique (figs. 1-3; e.g. a hash of the large set or divided set is a first technique);

sending (fig. 1, reference 6) the first hash value from the mobile node (M1) to the network part (M2), the first hash value being representative of the mobile-copy of the database (M1);

receiving, at the mobile node (M1), indication of results of a comparison (figs. 1-3; e.g. if the results indicate non-identical portions, mobile node M1 performs the hashing function again; therein the mobile node needs an indication of comparison in order to hash again), at the network part (M2), of the first hash value sent during said operation of sending to a corresponding network-copy of the first hash value (fig. 1, reference 6); and

if said indication of results of the comparison of the first hash value generated at the mobile node to a corresponding network-copy of the first hash value indicates that the mobile-copy database and the network copy database are out of match (col. 6 line 32-58; e.g. the process if the portions are not identical, or, out of match), thereafter generating a second hash value in the mobile node from a portion of the mobile-copy of the database, the second hash value (fig. 3) being formed using a second hash technique (figs. 2-3; e.g. a hash performed on a reduced data set) that is different from the first technique (figs. 1-3; e.g. a hash of the large set or divided set is a first technique and a hash of the divided set over a reduced portion is a second technique. See also fig. 7 and col. 8 lines 11-16 wherein hash technique H and different technique G is used); and

sending the second hash value (fig. 3; e.g. $h(A)$) from the mobile node to the network part for comparison to a corresponding network-copy of the second hash value (Fig. 3, reference 36);

wherein the radio communication system provides bi-directional (col. 9 lines 49-60 wherein the PDA device is synchronized to the server; therein data synchronized between the

PDA server and PDA device describes bi-directional data communications) data communications services to said mobile node part (fig. 9, reference 84), and

wherein data is communicated from the mobile node part to the network part by an up-link (col. 9 lines 60-61; e.g. the PDA device uses a wireless connectivity to upload the schedule; therein, uploading is interpreted as using an up-link) and, data is communicated from the network part to the mobile node part by a down-link (col. 1 lines 34-35; e.g. data is transferred between an original data set and remote copy and col. 10 lines 15-18; e.g. the PDA server returns a 365-bit mask to the PDA device).

With respect to claim 18, Livschitz teaches the method of claim 15 further comprising the operations of delivering the at least the portions of the mobile-copy database to the network part, comparing the portions of the mobile copy delivered during said operation of delivering with corresponding portions of the network-copy of the at least the first database, and causing overwriting of the portions of a selected one of the network-copy and the mobile-copy responsive to comparisons made during said operation of comparing the portions of the mobile-copy (col. 10, line 20; e.g. updating is seen as altering).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 14, 19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Livschitz as applied to claims 1 and 15 above, respectively, in view of Boothby (U.S. Patent 5,684,990).

With respect to claim 14, Livschitz does not expressly teach the apparatus of claim 13 wherein said database value updater operates pursuant to a selected conflict resolution protocol.

Boothby, however, teaches said database value updater operates pursuant to a selected conflict resolution protocol (col. 4 lines 39-49) for providing a conflict resolution strategy in a synchronization environment.

Accordingly, in the same field of endeavor, (i.e. synchronizing), it would have been obvious to one of ordinary skill in the data processing art at the time of the present invention to combine the teachings of the cited references because the conflict resolution strategies provided by Boothby would have given Livschitz assurance of a consistent database should conflicts arise when a data record is updated (e.g. need disclosed by Livschitz, col. 5 lines 26-27). Further, Boothby would have provided user interaction over the synchronization process for the benefit of a user having control over the synchronization process. Thus, Boothby would have provided a method to give Livschitz consistent and coherent databases during synchronizations.

With respect to claim 19, Livschitz does not expressly teach the method of claim 18 wherein the selected one of the network-copy and the mobile-copy of which the portions thereof are caused to be overwritten is selected according to a conflict resolution scheme.

Boothby, however, teaches the selected one of the network-copy and the mobile-copy of which the portions thereof are caused to be overwritten is selected according to a conflict resolution scheme (col. 4 lines 39-49) for providing a conflict resolution strategy in a synchronization environment.

Accordingly, in the same field of endeavor, (i.e. synchronizing), it would have been obvious to one of ordinary skill in the data processing art at the time of the present invention to combine the teachings of the cited references because the conflict resolution strategies provided by Boothby would have given Livschitz assurance of a consistent database should conflicts arise when a data record is updated (e.g. need disclosed by Livschitz, col. 5 lines 26-27). Further, Boothby would have provided user interaction over the synchronization process for the benefit of a user having control over the synchronization process. Thus, Boothby would have provided a method to give Livschitz consistent and coherent databases during synchronizations.

Regarding claim 20, Livschitz does not expressly teach the operation of creating a change-history by indicating overwriting of the portions selectively caused during said operation of selectively causing.

Boothby, however, teaches the operation of creating a change-history by indicating overwriting of the portions selectively caused during said operation of selectively causing (col. 4 line 25; i.e. "synchronization depends on knowledge of (2) the history of updates in each database" and further col. 6 line 10-15; i.e. "for every desktop record, the synchronization program takes not of the record's status, i.e., whether a corresponding status file record exists, and if so, whether that record has changed) for providing a history of changes that were caused.

In the same field of endeavor, (i.e. data synchronization), it would have been obvious to one of ordinary skill in the data processing art at the time of the present invention to combine the teachings of the cited references because Boothby would have given Livschitz a history of changes to determine what changes have been made and to keep track of those changes. Ultimately, in the database art, this provision would have benefited Livschitz in a way for backup in case of possible failure or other data loss (as taught by Boothby in col. 3 line 65-67).

Response to Arguments

Claim Rejections - 35 USC § 101

Applicant's arguments filed 1/6/2010 pertaining to the 101 rejection have been fully considered and found persuasive. Accordingly, the 101 rejection has been withdrawn.

102(b) rejections by Livschitz

Applicant's arguments with respect to claims 1 and 15 have been considered but found unpersuasive.

As addressed above in the rejection, Livschitz teaches the bi-directional communication as claimed. Specifically, Livschitz teaches synchronization between a PDA server and PDA device to describe communicating data between devices in a bi-directional flow. For example, Livschitz teaches the PDA device (i.e. mobile node) uploading (calendar) data to the PDA server (col. 9 lines 60-61) and the PDA server (i.e. mobile part) communicating data to a PDA device (col. 1 lines 34-35; e.g. data is transferred between an original data set and remote copy and col. 10 lines 15-18; e.g. the PDA server returns a 365-bit mask to the PDA device).

Thus, the argument that Livschitz does not show synchronization of databases in a two-way mobile communication device as found in the last paragraph on page 9 is respectfully found unpersuasive.

Further, Applicant argues that Livschitz teaches the synchronization of a database in a PDA, however, those of ordinary skill in the art know that a PDA does not send and receive communications data, which is well-known in the art to include e-mail, SMS messages and digital signals representing voice communications, to and from compatible communications networks respectively.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "communications" data) are not recited in the rejected claim(s). Rather, the claims merely recite communicating data. As noted above, Livschitz teaches this aspect.

Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Nonetheless, Examiner further disagrees with the statement "[however], those of ordinary skill in the art know that a PDA does not send and receive communications data, which is well-known in the art to include e-mail, SMS messages and digital signals representing voice communications, to and from compatible communications networks respectively".

Although “communications data” is not recited or specified in the claims, Examiner submits that it is notoriously well known in the art¹ that PDAs (such as smart phones; e.g. *Blackberry*² introduced as early as 1999) send and receive e-mails, SMS messages, and/or voice communications³ and further that bi-directional communication occur therebetween in synchronization. Accordingly, the argument is respectfully found unpersuasive.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

¹ see http://en.wikipedia.org/wiki/Personal_digital_assistant

² see <http://en.wikipedia.org/wiki/BlackBerry>

³ see <http://www.phonedog.com/cell-phone-buying-guide/glossary-of-cellular-terms.aspx>; e.g. “Personal Digital Assistant (PDA).

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT TIMBLIN whose telephone number is (571)272-5627. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Cottingham can be reached on 571-272-7079. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ROBERT TIMBLIN/
Examiner, Art Unit 2167

/John R. Cottingham/

Supervisory Patent Examiner, Art Unit 2167